



# ***HLA Performance Modeling: An Update***

AMG-17

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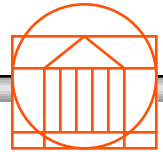
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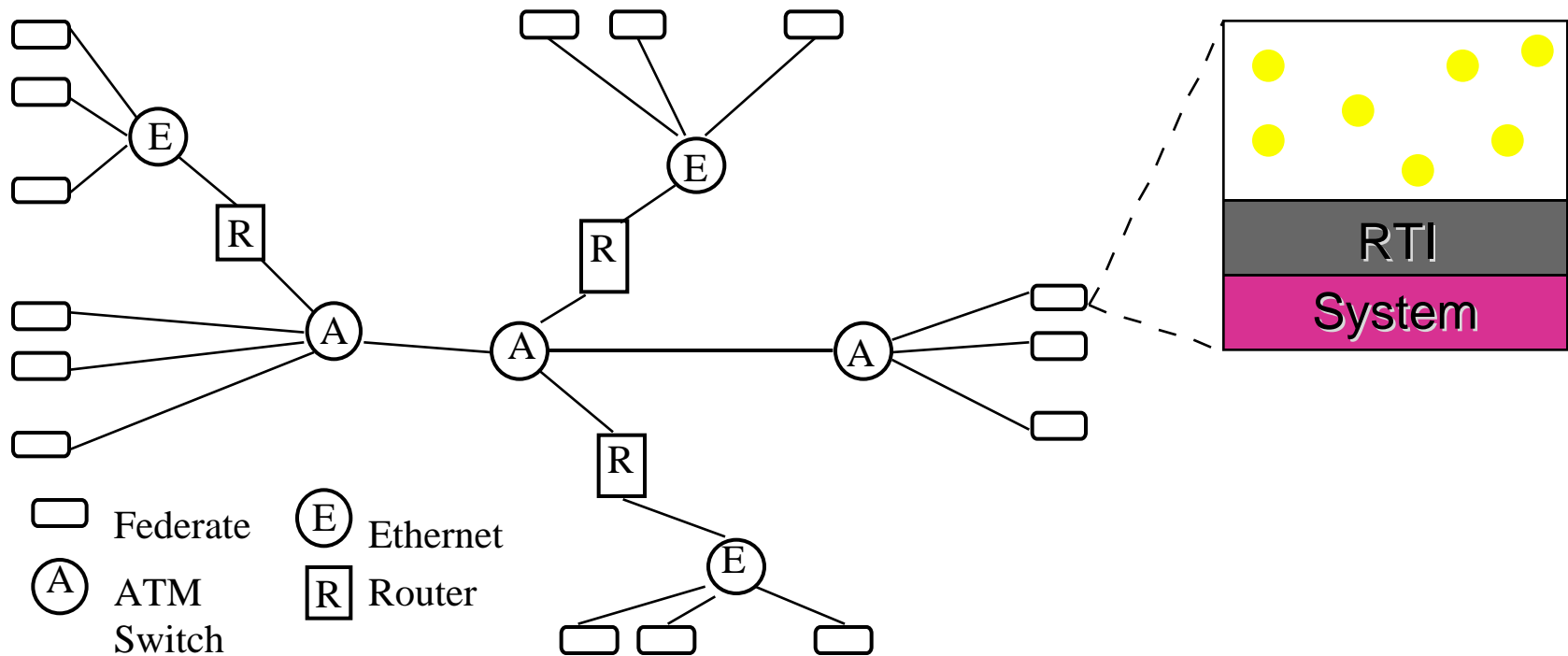
# Overview



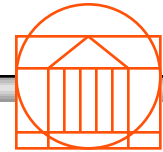
## Federation Analysis Tool

- ◆ configurable simulation model of HLA federations
- ◆ performance characteristics

# Federation



# Objects



## ► Carry their own parameters

- ◆ Id
- ◆ Class
- ◆ Group
- ◆ Execution time
- ◆ Activity state
- ◆ Transition matrix
- ◆ Probability of selection
- ◆ Probability distribution for generating RTI calls

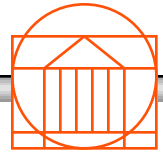
	H	M	Q	P
H	0.5	0.4	0.1	0.7
M	0.1	0.2	0.7	0.2
Q	0.1	0	0.9	0.1

# Capabilities



- Object-level modeling of federates
  - ❖ activity states and transitions
  - ❖ RTI service call profile including burstiness
  - ❖ attribute updates and interactions
    - periodic updates
- Connectivity:
  - ❖ Publish/subscribe
  - ❖ Data distribution mechanisms
- Event-driven and time-stepped feds.

# Capabilities



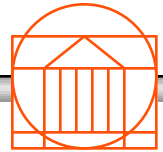
- Logical “Groups”
- Communications
  - ❖ cells - ATM, Ethernet, Point-to-point
  - ❖ routing
  - ❖ multicasting
- RTI Cost Model
- CPU contention

# Capabilities



- System parameters
  - ◆ CPU speed
  - ◆ bandwidths, latencies
- Measures of Performance (statistics)
  - ◆ based on framework

# Coming Soon...



- Object instantiates/deletes
- Expanded list of supported RTI calls
- Cause-and-effect interactions
- Multi-CPU federates
- Message transport categories
- Time management services
- Other resources



# Status



- Validation on-going
  - ◆ data collection at IEC as part of RTI testing